



## Advances and Challenges in Drug Delivery System in Regenerative and Therapeutic Medicine

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### Abstract:

Drug delivery has already had a major impact on many biomedical areas. They have been shown to be beneficial for stabilizing therapeutic compounds, overcoming obstacles to cellular and tissue uptake, and improving biodistribution of compounds to target sites in vivo. This enables effective delivery of encapsulated compounds to target sites while minimizing systemic toxicity. Liposomes present as an attractive delivery system due to their flexible physicochemical and biophysical properties, which allow easy manipulation to address different delivery considerations. Despite considerable research in the last 50 years and the plethora of positive results in preclinical studies, the clinical translation of liposome assisted drug delivery platforms has progressed incrementally. In this review, we will discuss the advances in liposome assisted drug delivery, biological challenges that still remain, and current clinical and experimental use for biomedical applications. For the treatment of human diseases, nasal and pulmonary routes of drug delivery are gaining increasing importance. These routes provide promising alternatives to parenteral drug delivery particularly for peptide and protein therapeutics. For this purpose,

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several drug delivery systems have been formulated and are being investigated for nasal and pulmonary delivery. These include liposomes, proliposomes, microspheres, gels, prodrugs, cyclodextrins, among others.



### Biography:

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Page 5